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cont

said pair of tubes, said indicator comprising a speaker and a sound card that generate a sound having a frequency that is proportional to the movement of blood in at least one of said pair of tubes.

REMARKS

Claims 3, 7-10, 14, 28-41, 44, 46-47, 49-50, 52, 53 and 56 remain in this application with Claims 3, 7, 8-10, 14, 46-47, 49, 52-53 and 56 having been amended; Claims 17-27 and 42 have been cancelled in response to a restriction requirement and Claims 1-2, 4-6, 11-13, 15-27, 42-43, 45, 48 and 51 have been cancelled to expedite the prosecution of this application. It should be understood that Claims 1-2, 4-6, 11-13, 15-27, 42-43, 45, 48 and 51 have been cancelled only to expedite the prosecution of this application and their cancellation should not be interpreted as an admission that they are not patentable. To the contrary, these cancelled claims are believed to be patentable and will be the subject of a continuation application to be filed shortly.

Applicants hereby acknowledge, with appreciation, the indication that Claims 33-41 are allowable.

The Examiner objected to Claims 3, 7-10, 14, 28-32, 44, 46-47, 49-50, 52-53 and 56 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. To that end, Applicants have amended these claims accordingly.

It should be noted that Applicants had earlier filed several information disclosure statements including PTO Form 1449 along with copies of each of the references listed. However, some of these PTO Form 1449 were not included with the Examiner's office

action indicating that she had considered them. To that end, Applicants have attached as Exhibits A-B, a copy of these information disclosure statements along with the stamped return receipt post card indicating that the PTO received them. Applicants respectfully request that these references be considered and that a copy of the PTO Form 1449, signed by the Examiner, be forwarded to the undersigned. Also attached as Exhibit C is a copy of the PTO Form 1449 that was signed by the Examiner but two of the references do not have a signature as indicated by the highlighted portion. It is not certain if the Examiner inadvertently missed these but Applicants respectfully request that they be considered.

Also attached as Exhibit D is an Information Disclosure Statement including copies of references that Applicants wish made of record in this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 3, 7-10, 14, 28-41, 44, 46-47, 49-50, 52, 53 and 56 now appearing in this application are allowable and such favorable action is respectfully requested. The Examiner is encouraged to contact the undersigned by telephone if it is believed that further discussion may lead to an early allowance of the claims.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

October 17, 2002

By



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Attorneys for Applicants

CERTIFICATE OF MAILING

I hereby certify that the foregoing AMENDMENT re Application Serial No. 09/628,401 is being deposited with the United States Postal Services as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on this 17th day of October, 2002.



Scott M. Slomowitz

Version with Markings to Show Changes Made

IN THE CLAIMS:

Please cancel Claims 1-2.

Please amend Claim 3 as follows:

3. (Amended) A method for determining the work of the heart of a living being, said method comprising the steps of:

(a) measuring the viscosity of the circulating blood of the living being over a plurality of shear rates;

(b) detecting a pressure pulse of the heart of the living being; and

(c) determining the work of the heart from a combination of said viscosity of the circulating blood of, and the pressure pulse of the heart of, the living being and [The method of Claim 2] wherein said step of determining the work of the heart (WOH) is defined as:

$$WOH = \frac{\pi d^4}{128TL} \int_0^T \frac{P^2(t)}{\mu(t)} dt$$

where:

T is a period of one cardiac cycle;

P(t) is the pressure pulse of the heart;

d represents the average inside diameter of the entire vascular system from the heart to the vein;

L represents the average length of blood vessels from the heart to vein; and

$\mu(t)$ is said viscosity of the circulating blood over a plurality of shear rates.

Please cancel Claims 4-6.

Please amend Claim 7 as follows:

7. (Amended) A method for reducing endothelial cell dysfunction in a living being which is caused by oscillating flow of the circulating blood of the living being, said method comprising the step of reducing the rate of ejection of the blood from the heart of the living being and [The method of Claim 6] wherein said step of reducing the rate of ejection of the blood from the heart comprises administering a β -blocker to the living being.

Please amend Claim 8 as follows:

8. (Amended) A method for reducing endothelial cell dysfunction in a living being which is caused by oscillating flow of the circulating blood of the living being, said method comprising the step of reducing the rate of ejection of the blood from the heart of the living being and [The method of Claim 6] wherein said step of reducing the rate of ejection of the blood from the heart comprises minimizing or eliminating smoking by the living being.

Please amend Claim 9 as follows:

9. (Amended) A method for reducing endothelial cell dysfunction in a living being which is caused by oscillating flow of the circulating blood of the living being, said method comprising the step of reducing the rate of ejection of the blood from the heart of the living being and [The method of Claim 6] wherein said step of reducing the rate of ejection of the blood from the heart comprises minimizing or eliminating the ingestion of caffeine by the living being.

Please amend Claim 10 as follows:

10. (Amended) A method for reducing endothelial cell dysfunction in a living being which is caused by oscillating flow of the circulating blood of the living being, said method comprising the step of reducing the rate of ejection of the blood from the heart of the living being and [The method of Claim 6] wherein said step of reducing the rate of ejection of the blood from the heart comprises ingesting of alcohol by the living being.

Please cancel Claims 11-13.

Please amend Claim 14 as follows:

14. (Amended) A method for reducing endothelial cell dysfunction in a living being which is caused by oscillating flow of the circulating blood of the living being, said method comprising the step of reducing the viscosity of the circulating blood of the living being and [The method of Claim 11] wherein said step of reducing the viscosity of the circulating blood of the living being comprises administering fish oil to the living being.

Please cancel Claims 15-27.

Please cancel Claims 42-43.


Please cancel Claim 45.

Please amend Claim 46 as follows:

46. (Amended) An apparatus for determining the deformability of red blood cells of the circulating blood of a living being, said apparatus comprising a plurality of tubes closely adjacent one another and each having an inner diameter different from its neighbor, each of said plurality of tubes having an opening exposed to a flow of circulating blood and each of said tubes being closed at its other end for collecting red blood cells therein and [The

apparatus of Claim 44] wherein the inner diameters of said plurality of tubes is within the range of 1 μ m to 10 μ m.

Please amend Claim 47 as follows:

47. (Amended) An apparatus for determining the deformability of red blood cells of the circulating blood of a living being, said apparatus comprising: 


a plurality of tubes closely adjacent one another and each having an inner diameter different from its neighbor, each of said plurality of tubes having an opening exposed to a flow of circulating blood and each of said tubes being closed at its other end for collecting red blood cells therein; [The apparatus of Claim 44 further comprising:]

an illuminator for passing light through each one of the plurality of tubes as they collect red blood cells in accordance with their respective inner diameters and wherein respective light rays, of varying degrees of redness corresponding to the amount of red blood cells collected in each of said plurality of tubes, emerge from said plurality of tubes; and

a redness color detector for detecting the degree of redness of each of said emerging light rays corresponding to each of said plurality of tubes.

Please cancel Claim 48.

Please amend Claim 49 as follows:

49. (Amended) An apparatus for detecting the lubricity of the circulating blood of a living being as the blood travels through the vascular system of the living being, said apparatus comprising: 

(a) a transparent tube for passing a falling column of the circulating blood of the living being;

(b) an illuminator for directing light at a portion of said transparent tube that contains a residue left by said falling column;

(c) a detector for detecting any light that passes through the transparent tube and residue and generating corresponding detection data,
[The apparatus of Claim 48 wherein] said detector comprising[es] a charge coupled device chip that generates pixel Gray scale values for said detection data; and

(d) calculator for receiving said detection data and generating a lubricity value based on said detection data.

Please cancel Claim 51.

Please amend Claim 52 as follows:

52. (Amended) An apparatus for effecting the viscosity measurement of circulating blood in a living being, said apparatus comprising:

a lumen arranged to be coupled to the vascular system of the being;

a pair of tubes having respective first ends coupled to said lumen for receipt of circulating blood from the being, one of said pair of tubes comprising a capillary tube having some known parameters;

a valve for controlling the flow of circulating blood from the being's vascular system to said pair of tubes; and

an analyzer, coupled to said valve, for controlling said valve to permit the flow of blood into said pair of tubes whereupon the blood in each of said pair of tubes assumes a respective initial position with respect thereto, said analyzer also being arranged for operating said valve to isolate said pair of tubes from the being's vascular system and for coupling said pair of tubes together so that the position of the blood in said pair of tubes changes, said analyzer also being arranged for monitoring the blood position change in at least one of said tubes and calculating the viscosity of the blood based thereon, said analyzer comprising an indicator that generates an indication as to movement of the blood in at least one of said pair of tubes and [The apparatus of Claim 51] wherein said indicator comprises a flashing light whose flash rate is proportional to the movement of blood in at least one of said pair of tubes.

Please amend Claim 53 as follows:

53. (Amended) An apparatus for effecting the viscosity measurement of circulating blood in a living being, said apparatus comprising:

a lumen arranged to be coupled to the vascular system of the being;

a pair of tubes having respective first ends coupled to said lumen for receipt of circulating blood from the being, one of said pair of tubes comprising a capillary tube having some known parameters;

a valve for controlling the flow of circulating blood from the being's vascular system to said pair of tubes; and

an analyzer, coupled to said valve, for controlling said valve to permit the flow of blood into said pair of tubes whereupon the blood in each of said pair of tubes assumes a respective initial position with respect thereto, said analyzer also being arranged for operating said valve to isolate said pair of tubes from the being's vascular system and for coupling said pair of tubes together so that the position of the blood in said pair of tubes changes, said analyzer also being arranged for monitoring the blood position change in at least one of said tubes and calculating the viscosity of the blood based thereon, said analyzer comprising an indicator that generates an indication as to movement of the blood in at least one of said pair of tubes, [The apparatus of Claim 51 wherein] said indicator comprising[es] a speaker and a sound card that generate a sound having a frequency that is proportional to the movement of blood in at least one of said pair of tubes.

Please cancel Claims 54-55.

Please amend Claim 56 as follows:

56. (Amended) An apparatus for effecting the viscosity measurement of circulating blood in a living being, said apparatus comprising:

a lumen arranged to be coupled to the vascular system of the being;

a pair of tubes having respective first ends and second ends, said first ends being coupled together via a capillary tube having some known parameters;

a valve for controlling the flow of circulating blood from the being's vascular system to said pair of tubes, said valve being coupled to a second end of one of said pair of tubes and being coupled to said lumen; and

an analyzer, coupled to said valve, for controlling said valve to permit the flow of blood into said pair of tubes whereupon the blood in each of said pair of tubes assumes a respective initial position with respect thereto, said analyzer also being arranged for operating said valve to isolate said pair of tubes from the being's vascular system so that the position of the blood in said pair of tubes changes, said analyzer also being arranged for monitoring the blood position change in at least one of said tubes and calculating the viscosity of the blood based thereon, said analyzer comprising an indicator that generates an indication as to movement of the blood in at least one of said pair of tubes, [The apparatus of Claim 54 wherein] said indicator comprising[es] a speaker and a sound card that generate a sound having a frequency that is proportional to the movement of blood in at least one of said pair of tubes.



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App: Kenneth Kensey, et al.

ASN: 09/628,401

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INCLUDING WORK OF AND CONTRA CTILITY OF HEART AND
THERAPEUTIC APPLICATIONS AND COMPOSITIONS THEREOF

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of a Information Disclosures Statement;

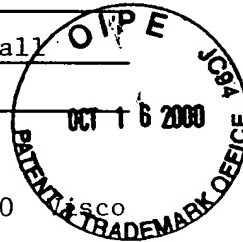
Form 1449 listing all references; Copies of all
references.

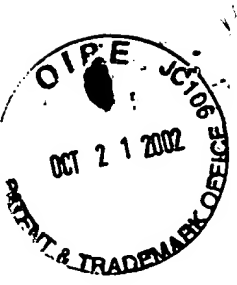
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V1025/20044

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PATENT #12
V1025/20044
B. Webb
10/29/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT EXAMINING OPERATION

Applicant : Kenneth Kensey, William N. Hogenauer,
and Young Cho

Serial No. : 09/628,401

Filed : August 1, 2000

For : APPARATUS AND METHODS FOR
COMPREHENSIVE BLOOD ANALYSIS,
INCLUDING WORK OF, AND CONTRACTILITY
OF, HEART AND THERAPEUTIC
APPLICATIONS AND COMPOSITIONS
THEREOF

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INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 CFR 1.97 (b) (1)

Commissioner for Patents
Washington, D.C. 20231

Sir:

This Information Disclosure Statement is being filed pursuant to 37 CFR 1.97 (b) (1).

The present application is a Continuation-in-Part of ASN 09/501,856, which is based on ASN 08/919,906, which is now U.S. Patent No. 6,019,735.

Applicant now wishes to make of record all references listed in the above US patent and patent application. The relevance of several of these references are identified in the background of the invention of the present application. None of these references are not believed to anticipate nor render obvious the subject matter of the present application.

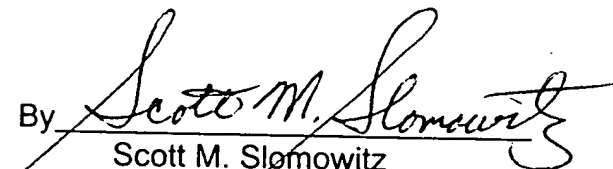
This Information Disclosure Statement is being filed within three months of the filing date of this application.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

October 11, 2000

By


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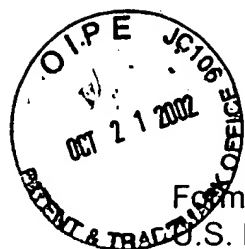
Philadelphia, PA 19103-2212

(215) 567-2010

CERTIFICATE OF MAILING

I hereby certify that the foregoing INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 CFR 1.97 (b) (1) re application Serial No. 09/628,401, PTO form 1449 listing references and attached references are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, this 11th day of October, 2000.


Scott M. Slomowitz



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Applicant : Kenneth Kensey, et al.
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Filing Date : August 1, 2000

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PPW	AA 1,810,992	6/23/31	Dallwitz-Wegner	
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	AC 2,696,734	12/14/54	Brunstrum, et al.	73
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	AK 3,286,511	11/22/66	Harkness	73
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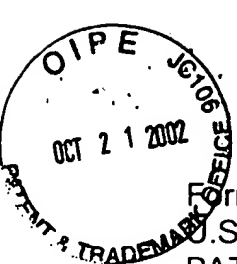
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R/W



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	ABB 5,181,415	1/26/93	Esvan, et al.	73
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	ABH 5,327,778	7/12/94	Park	73
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(Invention Registration)

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Examiner _____

Date Considered _____

Form PTO-1449 (Rev. 7-50)
U.S. DEPARTMENT OF COMMERCE
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Sheet 9 of 10

Applicant : Kenneth Kensey, et al.
Serial No. : 09/628,401
Filing Date : August 1, 2000

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OTHER PRIOR ART (including Author, Title, Date, Pages)

Oguraa, et al.	Measurement of Human Red Blood Cell Deformability Using A Single Micropore on a Thin Si_3N_4 Film	IEEE Transactions on Biomedical Engineering Vol. 38, No. 8, August, 1991
Hausler, et al.	A Newly Designed Oscillating Viscometer for Blood Viscosity Measurements	1996 Vol. 33, No. 4 Biorheology pp.397-404
Martin, et al.	Apparent Viscosity of Whole Human Blood at Various Hydrostatic Pressures I. Studies on Anticoagulated Blood Employing a New Capillary Viscometer	Biorheology Pg.3-12 1978, Vol. 11
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Chmiel	A New Capillary Viscometer For Clinical use	Biorheology Pg. 301-307 1979, Vol. 12
Pall Corporation	Pall BPF4 High Efficiency Leukocyte Removal Blood Processing Filter System	Pall Biomedical Products Corporation 1993

Examiner_____

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Sheet 10 of 10

Applicant : Kenneth Kensey, et al.
Serial No. : 09/628,401
Filing Date : August 1, 2000

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Qamar, et al.	The Goldman Algorithm Revisited: Prospective Evaluation of a Computer Derived Algorithm Versus Unaided Physician Judgment in Suspected Acute Myocardial Infarction	Am. Heart J. 138 Vol. 4, 1999, pp 705-709
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Examiner_____

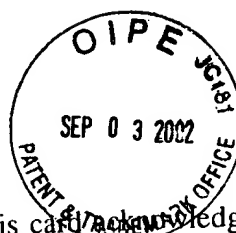
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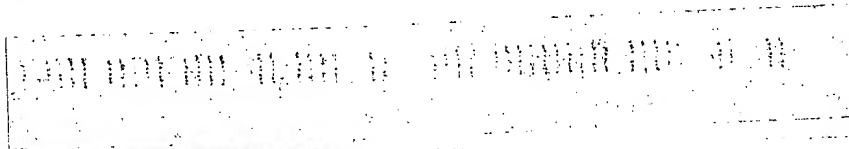
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App: Kensey, et al.
ASN: 09/628,401
Filed: August 1, 2000



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SMS/jpf Rheologics, Inc.
V1025/20044 Mailed 8/30/02





PATENT
Customer No. 03000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT EXAMINING OPERATION

Applicant(s): Kenneth Kensey, et al.

Serial No: 09/628,401

Group Art Unit: 3736

Filed: August 1, 2000

Examiner: P. Wingood

Att. Docket No.: V1025/20044

Confirmation No.: 5645

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For: APPARATUS AND METHODS FOR COMPREHENSIVE BLOOD ANALYSIS,
INCLUDING WORK OF, AND CONTRACTILITY OF, HEART AND
THERAPEUTIC APPLICATIONS AND COMPOSITIONS THEREOF

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, DC 20231

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the reference listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of the reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference be made of record therein and appear among the "References Cited" on any patent to issue therefrom. No representation is made that the reference is prior art with respect to this application.

Application No. 09/628,401

This Information Disclosure Statement is being filed before the mailing of a first Office Action on the merits under 37 CFR § 1.97(b)3.

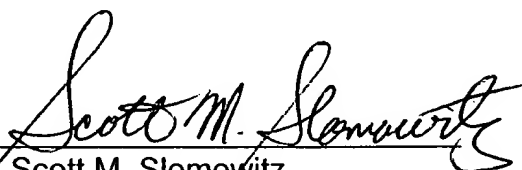
Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

August 30, 2002

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of this submission.

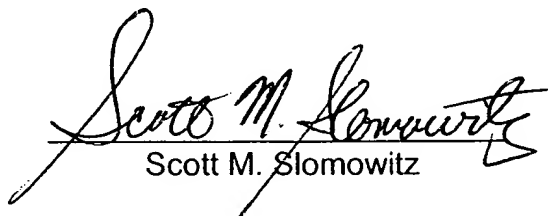
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
Scott M. Slomowitz
Registration No. 39,032
Customer No. 03000
(215) 567-2010
Attorneys for Applicants

CERTIFICATE OF MAILING

I hereby certify that the foregoing Information Disclosure Statement and PTO Form 1449 listing the reference and a copy of the reference re Application No. 09/628,401 are being deposited with the United States Postal services as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, DC, 20231 on this ~~30th~~ day of August, 2002.



Scott M. Slomowitz

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PTO/SB/O8A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Substitute for Form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheet as necessary)				Complete if Known Application Number 09/628,401 Filing Date August 1, 2000 First Named Inventor Kenneth Kensey Group Art Unit 3736 Examiner Name P. Wingood Attorney Docket Confirmation No. 5645 Customer No. 03000	
Sheet	1	of	1		

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
<i>RM</i>		6,428,488		Kensey, et al.	8/06/2002

FOREIGN PATENT DOCUMENTS

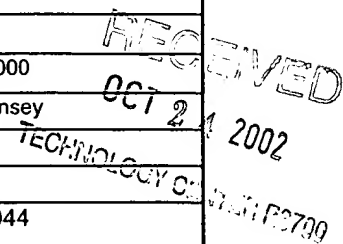
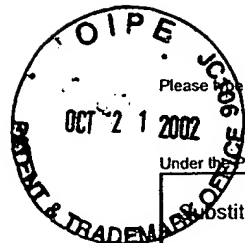
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		Office	Number	Kind Code (if known)			

OTHER DOCUMENTS - NON PATENT LITERATURE DOCUMENTS

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EXAMINER <i>Pamela J. Hurd</i>	DATE CONSIDERED <i>1.10.03</i>
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App: Kensey, et al.

ASN: 09/628,401

for: APPARATUS AND METHODS FOR COMPREHENSIVE BLOOD ANALYSIS,
INCLUDING WORK OF A CONTRACTILITY OF HEART AND
THERAPEUTIC APPLICATIONS AND COMPOSITION THEREOF

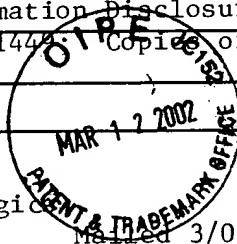
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List of references on PTO Form 1449: Copies of references

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TECHNOLOGY CENTER R3700

Applicants: Kenneth Kensey, et al.

Serial No: 09/628,401

Group Art Unit: 3737

Filed: August 1, 2000

Examiner: K. White

Att. Docket No.: V1025/20044

Customer No. 03000

For: APPARATUS & METHODS FOR COMPREHENSIVE BLOOD ANALYSIS,
INCLUDING WORK OF A CONTRACTILITY OF HEART AND THERAPEUTIC
APPLICATIONS AND COMPOSITION THEREOF

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, DC 20231

Sir:

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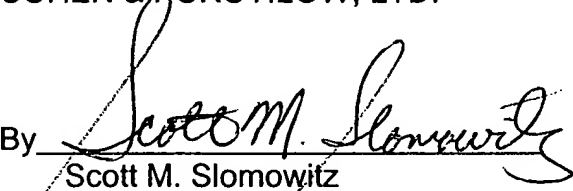
This Information Disclosure Statement is being filed after the period specified in 37 CFR § 1.97(b), but before the mailing date of any of a final action under 37 CFR § 1.113, a Notice of Allowance under 37 CFR § 1.311 or an action that otherwise closes prosecution in the application. Accordingly, I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office(International Search Reports PCT/US01/03907 and PCT/US01/23696) in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. Accordingly, no fee is due. 37 CFR § 1.97(c)(1) and (e)(1).

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

March 7, 2002

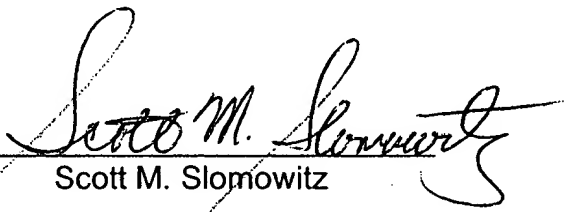
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Scott M. Slomowitz
Registration No. 39,032
Customer No. 03000
(215) 567-2010
Attorney for Applicants

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of this submission.

CERTIFICATE OF MAILING

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Scott M. Slomowitz



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Sheet	1	of	1
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Complete if Known

Application Number	09/628,401
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Filing Date	August 1, 2000
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First Named Inventor	Kenneth Kensey
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Group Art Unit	3737
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Examiner Name MM K. White



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U.S. PATENT DOCUMENTS

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Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office	Number	Kind Code (if known)			
			WO 01/36936		Kensey, et al.	5/25/2001	
			WO 99/10724		Kensey, et al.	3/04/1999	
			DE 3138514		Myrenne, et al.	4/14/1983	T
			2 510 257		Boyer, et al.	1/28/1982	T

OTHER DOCUMENTS - NON PATENT LITERATURE DOCUMENTS

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